CyOptics expands fab for 40 Gb/s

CyOptics (Waltham, MA, USA) - founded in early 1999 - is expanding its wafer fab and packaging facilities by over 30,000 ft^2 for 40Gb/s InP opto devices with a new facility Yokneam, Israel.

First qualification devices are expected in Q3/2000, with full-scale manufacturing in 2002.

First commercial deployment of 40Gb/s systems is expected at end-2001, and component demand precedes system deployment by at least six months, reckons president Eran Yarkoni.

Pictured - CyOptics new wafer fab and packaging facility in Yokneam, Israel for 40 Gb/s InP-based optoelectronic components.

RHK projects a market for active components in 2004 of US$1.4bn for 40Gb/s (a CAGR of close to 200%) and US$4.7bn for 10Gb/s (a CAGR of 49%).

Mitsubishi's 40 Gb/s EA modulator

The Electronic Device Group of Mitsubishi Electric Corp claims high reliability results with its following components:

• its 40 Gb/s electro-absorption modulator – which has a multi-quantum-well structure with integrated transparent waveguides (to shorten modulator length); a semi-insulating InP:Fe substrate (to reduce parasitic capacitance to 0.07 pF for 40 GHz bandwidth); 15 dB extinction ratio at a 1553 nm wavelength and 0-3 V operation; and estimated lifetime of 17m hours at 25°C;

• a 1.3 μm Fabry-Perot laser for uncooled 10 Gb/s Ethernet longer than 3 km - using AlInGaAs to improve temperature dependence of threshold current and slope efficiency; using a ridge waveguide structure to maintain 10 Gb/s speed with a low power penalty of 1.4 dB (at a bit error rate of 1 in 10bn) at +10.3 ps/nm dispersion SMF transmission throughout a wide temperature range (at 85°C) and an estimated lifetime of more than 200,000 hours (more than conventional InGaAsP FP lasers). Increased relaxation oscillation frequency was achieved at an elevated temperature by increasing the product of the front/rear facet reflectivity and decreasing cavity length. The laser showed no deterioration in catastrophic optical damage (COD) level and a pulsed output power of more than 200 mW with no noticeable fluctuation for 1,300 hours.

* New Mitsubishi Electric products include:

• 10 Gb/s transponder families (for volume production in Q2/2001):

• MF-10KMXF 1310 nm (uncooled), for 0.6-12 km (ITU-T: I-64.1r and I-64.1 - SONET: VSR and SR-1) transmission;

• MF-10KMXA and MF-10KMXG 1550 nm (cooled), for 40 km (SONET: IR-2) transmission;

• MF-10KMXH 1550 nm (uncooled), for 60-80 km (ITU-T: S-64.2bE — SONET: LR-2) transmissions.

These combine in one module a transmitter (using a direct modulation and electroabsorption laser), a receiver (using a photodiode or avalanche photodiode preamplifier), and mux/demux (for 16:1 multiplexing and 1:16 demultiplexing of 622.08 Mbps Low-Voltage Differential Signalling input/output data signals).

Also new - distributed feedback lasers for 2.5 Gb/s data rates:

• 1550 nm C-band cooled FU-672PDF and FU-675PDF wavelength monitor modules (with an integrated stabiliser to lock output wavelength to the ITU grid channel) for metro networks and long-haul applications (where high levels of stability for CW operations are critical);

• 1550 nm uncooled, pulsed FU-645SDF module; and

• uncooled ML7XX16 discrete component (with a wide –20°C to +85°C temperature range).